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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 631,638	08 02 2000	Kevin M. Moore	1533.0980001 SRL PAJ	8662

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EXAMINER

NAFF, DAVID M

ART UNIT

PAPER NUMBER

1651

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DATE MAILED: 05 20 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/631 638

Applicant(s)

Moore et al

Examiner

Hoff

Group Art Unit

1651

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

☒ Responsive to communication(s) filed on 2/20/03

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

## Disposition of Claims

☒ Claim(s) 1, 5-7, 9-17 & 21-31

is/are pending in the application.

Of the above claim(s)

is/are withdrawn from consideration.

Claim(s)

is/are allowed.

☒ Claim(s) 1, 5-7, 9-17 & 21-31

is/are rejected.

Claim(s)

is/are objected to.

Claim(s)

are subject to restriction or election requirement.

## Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All ☐ Some\* ☐ None ☐ of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

Information Disclosure Statement(s), PTO-1449, Paper No(s) \_\_\_\_\_

Interview Summary, PTO-413

Notice of Reference(s) Cited, PTO-892

Notice of Informal Patent Application, PTO-152

Notice of Draftsperson's Patent Drawing Review, PTO-948

Other \_\_\_\_\_

Office Action Summary

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/26/03 has been entered.

The amendment of 1/24/03 after final rejection has been entered. The amendment canceled claims 2-4 and 18-20 and amended claims 1 and 17.

10 Claims examined on the merits are 1, 5-7, 9-17 and 21-31 which are all claims in the application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

15 Claims 1, 5-7, 9-17 and 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dumpelmann et al (5,852,211) in view of Bott et al (0 174 624) for the type of reasons set forth in the previous office actions of 8/27/02 and 12/23/02, and for reasons herein.

The claims are drawn to recovery of an organic acid from a fermentation broth by drying the broth without prior removal of insolubles from the broth to produce a dried product, adding the dried product to a lower alcohol in the presence of an acid and removing insolubles by to obtain the organic acid. The organic acid can be 2-keto-L-gulonic acid and the acid present when the dry product is added to the lower alcohol can be sulphuric acid.

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Dumpelmann et al disclose a process for obtaining 2-keto-L-gulonic acid (KGA) from a fermentation solution containing the sodium salt of 2-keto-L-gulonic acid (NaKGA) that results from neutralization. The process involves crystallizing the sodium salt (NaKGA) and separating the  
5 resulting crystals from the fermentation solution, suspending the NaKGA crystals in a lower alcohol acidified to a pH of about 1.5 to about 3.5 with an acid such as sulphuric acid where the acid is converted to an insoluble sodium salt and the NaKGA is converted to free KGA, and removing the insoluble sodium salt of the acid to obtain an alcoholic  
10 solution of the KGA. Afterwards, the free KGA may be esterified by alcohol of the alcoholic solution in the presence of a catalytic amount of acid to obtain an alkyl ester of the KGA. For example, see col 4, lines 10-33, and Examples 1-3.

Bott et al disclose producing alkyl lactate esters by filtering a  
15 crude fermentation mixture containing calcium lactate, spray drying the resulting filtrate to obtain solid calcium lactate, reacting the solid calcium lactate with an alcohol in the presence of an acid that forms a water-soluble calcium salt and isolating the lactic acid ester formed.

It would have been obvious to omit crystallizing NaKGA in the  
20 process of Dumpelmann et al and instead dry the fermentation broth and react the dried broth with the lower alcohol in the presence of acid as suggested by Bott et al using steps of drying a fermentation solution without crystallizing in the production of a lactic acid ester from a fermentation mixture containing a calcium salt of the lactic acid.  
25 Drying without crystallizing would have been expected to simplify the

process of Dumpelmann et al, and such simplification would have been motivation to use drying in place of crystallizing and separating the crystals. While Bott et al filters the fermentation broth, it would have been obvious to omit filtering to further simplify. There is seen  
5 nothing to lead one to believe that the reacting of NaKGA as disclosed by Bott et al cannot occur in an unfiltered fermentation broth.

***Response to Arguments***

Applicant's arguments filed 1/24/03 have been fully considered but they are not persuasive.

10 Applicants point out that claims 1 and 17 now exclude the removal of insolubles prior to the drying of the fermentation broth.

While not removing solubles is disclosed in the specification (page 7, lines 19-20), the specification also discloses (page 7, lines 3-18) that preferred embodiments involve partial or at least 90% removal of  
15 insolubles before drying, and Examples 2-4 show removing insolubles before drying. Therefore, it is apparent that not removing insolubles is non-critical, and is an alternative to preferred embodiments of removing insolubles.

It is granted as asserted by applicants that Bott et al filter the  
20 broth before drying. However, to omit filtering merely to simplify would have been clearly obvious. No result has been established from not filtering other than to simplify, and to remove a step merely to simplify is obvious. As noted above, the present specification discloses that partial or complete removal of insolubles is a preferred embodiment.

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Art Unit: 1651

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is (703) 308-0520. The examiner can normally be reached on Monday-Thursday and every other Friday from about 8:30 AM to about 6:00

5 PM.

If attempts to reach the examiner by telephone are unsuccessful, a message can be left on voice mail.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn, can be reached at telephone number

10 (703) 308-4743.

The fax phone number is (703) 872-9306 before final rejection or (703) 872-9307 after final rejection.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist

15 whose telephone number is (703) 308-0196.

A handwritten signature in black ink, appearing to be "E. 74. [initials]".

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20 DMN  
5/19/03